

CLAIMS

What is claimed is:

1. A method of modeling an environment containing a collection of items, said method comprising:
 - providing an environmental hierarchy describing a modeled environment;
 - providing a product catalog that includes data describing a plurality of items that may be utilized to populate the modeled environment;
 - providing a configuration library that includes data describing a spatial relationship between first and second items among said plurality of items in said product catalog; and
 - permitting population of said modeled environment by storing, in a database, data representative of the spatial relationship between said environmental hierarchy and a collection of items including said first item.
2. The method of Claim 1, wherein said step of providing a product catalog comprises specifying values for attributes associated with said plurality of items and storing said values in said product catalog.
3. The method of Claim 2, wherein said step of permitting a user to define at least one of said attributes.
4. The method of Claim 2, wherein said step of providing a configuration library comprises selecting said first and second items from said product catalog, specifying said spatial relationship between said first and second items in which said second item is within an area defined by said first item, and storing an indication of said spatial relationship in said configuration library.

1 5. The method of Claim 1, wherein providing said environmental hierarchy
2 comprises providing an environmental hierarchy including at least higher and lower
3 levels each having an associated dataset describing a respective one of first and
4 second regions, wherein the second region is within the first region.

1 6. The method of Claim 5, wherein at least one of said higher level and said
2 lower level represents an area of land.

1 7. The method of Claim 6, wherein said area of land comprises one of a
2 construction site, hazardous waste site, and agricultural site.

1 8. The method of Claim 6, wherein said area of land comprises a jurisdiction of
2 a governmental entity.

1 9. The method of Claim 5, wherein at least one of said higher level and said
2 lower level represents at least a portion of a structure.

1 10. The method of Claim 9, wherein said structure comprises one of a retail sales
2 facility and a warehouse facility.

1 11. The method of Claim 9, wherein said structure comprises one of a
2 manufacturing facility, a processing facility, and a production facility.

1 12. The method of Claim 9, wherein said structure comprises a structure under
2 construction.

1 13. The method of Claim 1, wherein providing a product catalog comprises
2 storing non-graphical data describing one or more attributes of said plurality of items
3 and graphical data specifying a graphical representation of at least one of said
4 plurality of items.

1 14. The method of Claim 13, wherein at least one of said one or more attributes
2 is time-dependent.

1 15. The method of Claim 1, and further comprising displaying within a display
2 of a data processing system a graphical representation of said modeled environment,
3 said graphical representation including at least a first graphical object representing
4 said first item and at least a second graphical object representing said environmental
5 hierarchy.

1 16. The method of Claim 15, wherein displaying comprises displaying graphical
2 object representing fewer than all items in said collection of items populating said
3 modeled environment.

1 17. The method of Claim 1, wherein permitting population of said modeled
2 environment comprises allowing entry of at least a portion of said data representative
3 of the spatial relationship utilizing a scanner.

1 18. The method of Claim 1, wherein providing a product catalog comprises
2 storing non-graphical data describing one or more attributes of said plurality of items
3 and graphical data specifying a graphical representation of at least one of said
4 plurality of items.

1 19. The method of Claim 1, wherein:
2 said modeled environment comprises a retail environment;
3 said product catalog includes data describing at least one item for sale; and
4 said method further comprises permitting removal of said item for sale from
5 said modeled environment by removing data representative of a spatial relationship
6 between said at least one item for sale and said environmental hierarchy or another
7 item in said product catalog.

1 20. The method of Claim 19, and further comprising permitting generation of a
2 report reflecting correlation of sales of items with subsets of said modeled
3 environment for which spatial relationships with said items have been defined.

1 21. The method of Claim 1, wherein at least one item in said product catalog
2 represents a human belonging to an organization, wherein providing a product
3 catalog includes associating said item representing a human with a calendaring
4 attribute representing a schedule of the human.

1 22. The method of Claim 1, wherein said modeled environment comprises a data
2 network and providing a product catalog comprises providing a product catalog
3 including at least one item representing a dataset.

1 23. The method of Claim 2, wherein at least one attribute associated with a
2 particular item among said plurality of items comprises a procedure attribute, and an
3 attribute value of said procedure attribute tracks performance of a procedure
4 associated with the particular item.

1 24. The method of Claim 14, and further comprising permitting generation of a
2 time-dependent view of items from said product catalog populating said modeled
3 environment.

1 25. A data processing system, comprising:

2 a processor;

3 data storage coupled to the processor;

4 a modeling tool stored in said data storage and executable by said processor,
5 said modeling tool including:

6 means for creating an environmental hierarchy describing a modeled
7 environment;

8 means for creating a product catalog for containing data describing a
9 plurality of items that may be utilized to populate the modeled environment;

10 means for creating a configuration library for containing data
11 describing a spatial relationship between first and second items among said
12 plurality of items in said product catalog; and

13 means for populating said modeled environment by storing, in a
14 database, data representative of the spatial relationship between said
15 environmental hierarchy and a collection of items including said first item.

1 26. The data processing system of Claim 25, wherein said means for creating a
2 product catalog comprises means for specifying values for attributes associated with
3 said plurality of items and storing said values in said product catalog.

1 27. The data processing system of Claim 26, wherein said means for creating
2 comprises means for permitting a user to define at least one of said attributes.

1 28. The data processing system of Claim 26, wherein said means for creating a
2 configuration library comprises:

3 means for selecting said first and second items from said product catalog;

4 means for specifying said spatial relationship between said first and second
5 items in which said second item is within an area defined by said first item; and
6 means for storing an indication of said spatial relationship in said
7 configuration library.

1 29. The data processing system of Claim 25, wherein said means for creating said
2 environmental hierarchy comprises means for creating an environmental hierarchy
3 including at least higher and lower levels each having an associated dataset
4 describing a respective one of first and second regions, wherein the second region is
5 within the first region.

1 30. The data processing system of Claim 29, wherein at least one of said higher
2 level and said lower level represents an area of land.

1 31. The data processing system of Claim 30, wherein said area of land comprises
2 one of a construction site, hazardous waste site, and agricultural site.

1 32. The data processing system of Claim 30, wherein said area of land comprises
2 a jurisdiction of a governmental entity.

1 33. The data processing system of Claim 29, wherein at least one of said higher
2 level and said lower level represents at least a portion of a structure.

1 34. The data processing system of Claim 33 wherein said structure comprises one
2 of a retail sales facility and a warehouse facility.

1 35. The data processing system of Claim 33, wherein said structure comprises one
2 of a manufacturing facility, a processing facility, and a production facility.

1 36. The data processing system of Claim 33, wherein said structure comprises a
2 structure under construction.

3 37. The data processing system of Claim 25, wherein said means for creating a
4 product catalog comprises means for storing non-graphical data describing one or
5 more attributes of said plurality of items and graphical data specifying a graphical
6 representation of at least one of said plurality of items.

1 38. The data processing system of Claim 37, wherein at least one of said one or
2 more attributes is time-dependent.

1 39. The data processing system of Claim 25, and further comprising:
2 a display; and
3 means for displaying within the display a graphical representation of said
4 modeled environment, said graphical representation including at least a first graphical
5 object representing said first item and at least a second graphical object representing
6 said environmental hierarchy.

1 40. The data processing system of Claim 39, wherein said means for displaying
2 comprises means for displaying graphical object representing fewer than all items in
3 said collection of items populating said modeled environment.

1 41. The data processing system of Claim 25, wherein said means for populating
2 comprises means for receiving from a scanner and entering into the database at least
3 a portion of said data representative of the spatial relationship.

1 42. The data processing system of Claim 25, wherein:
2 said modeled environment comprises a retail environment;
3 said product catalog includes data describing at least one item for sale; and
4 said modeling tool further comprising means for removing said item for sale
5 from said modeled environment by removing data representative of a spatial
6 relationship between said at least one item for sale and said environmental hierarchy
7 or another item in said product catalog.

1 43. The data processing system of Claim 42, said modeling tool further
2 comprising means for generating a report reflecting correlation of sales of items with
3 subsets of said modeled environment for which spatial relationships with said items
4 have been defined.

1 44. The data processing system of Claim 25, wherein said means for creating a
2 product catalog comprises means for creating a product catalog including at least one
3 human item representing a human belonging to an organization, said human item
4 having a calendaring attribute representing a schedule of the human.

1 45. The data processing system of Claim 25, wherein said means for creating a
2 product catalog comprises means for creating a product catalog representing a data
3 network, said product catalog including at least one item representing a dataset.

1 46. The data processing system of Claim 26, wherein at least one attribute
2 associated with a particular item among said plurality of items comprises a procedure
3 attribute, and an attribute value of said procedure attribute tracks performance of a
4 procedure associated with the particular item.

1 47. The data processing system of Claim 38, said modeling tool further
2 comprising means for generating of a time-dependent view of items from said
3 product catalog populating said modeled environment.

1 48. A program product, comprising:
2 a computer usable medium; and
3 a modeling tool encoded within said computer usable medium and executable
4 by a computer system, said modeling tool including:
5 means for creating an environmental hierarchy describing a modeled
6 environment;
7 means for creating a product catalog that contains data describing a
8 plurality of items that may be utilized to populate the modeled environment;
9 means for creating a configuration library that contains data
10 describing a spatial relationship between first and second items among said
11 plurality of items in said product catalog; and
12 means for populating said modeled environment by storing, in a
13 database, data representative of the spatial relationship between said
14 environmental hierarchy and a collection of items including said first item.

1 49. The program product of Claim 48, wherein said means for creating a product
2 catalog comprises means for specifying values for predefined attributes associated
3 with said plurality of items and storing said values in said product catalog.

1 50. The program product of Claim 49, wherein said means for creating a product
2 catalog comprises means for permitting a user to define at least one of said attributes.

1 51. The program product of Claim 49, wherein said means for creating a
2 configuration library comprises:

3 means for selecting said first and second items from said product catalog;

4 means for specifying said spatial relationship between said first and second
5 items in which said second item is within an area defined by said first item; and

6 means for storing an indication of said spatial relationship in said
7 configuration library.

1 52. The program product of Claim 48, wherein said means for creating said
2 environmental hierarchy comprises means for creating an environmental hierarchy
3 including at least higher and lower levels each having an associated dataset
4 describing a respective one of first and second regions, wherein the second region is
5 within the first region.

1 53. The program product of Claim 52, wherein at least one of said higher level
2 and said lower level represents an area of land.

1 54. The program product of Claim 53, wherein said area of land comprises one
2 of a construction site, hazardous waste site, and agricultural site.

1 55. The program product of Claim 53, wherein said area of land comprises a
2 jurisdiction of a governmental entity.

1 56. The program product of Claim 52, wherein at least one of said higher level
2 and said lower level represents at least a portion of a structure.

1 57. The program product of Claim 56, wherein said structure comprises one of
2 a retail sales facility and a warehouse facility.

1 58. The program product of Claim 56, wherein said structure comprises one of
2 a manufacturing facility, a processing facility, and a production facility.

1 59. The program product of Claim 56, wherein said structure comprises a
2 structure under construction.

3 60. The program product of Claim 48, wherein said means for creating a product
4 catalog comprises means for storing non-graphical data describing one or more
5 attributes of said plurality of items and graphical data specifying a graphical
6 representation of at least one of said plurality of items.

1 61. The program product of Claim 60, wherein at least one of said one or more
2 attributes is time-dependent.

1 62. The program product of Claim 48, and further comprising means for
2 displaying within a display of a computer system a graphical representation of said
3 modeled environment, said graphical representation including at least a first graphical
4 object representing said first item and at least a second graphical object representing
5 said environmental hierarchy.

1 63. The program product of Claim 62, wherein said means for displaying
2 comprises means for displaying graphical object representing fewer than all items in
3 said collection of items populating said modeled environment.

1 64. The program product of Claim 48, wherein said means for populating
2 comprises means for receiving from a scanner and entering into the database at least
3 a portion of said data representative of the spatial relationship.

1 65. The program product of Claim 48, wherein:
2 said modeled environment comprises a retail environment;
3 said product catalog includes data describing at least one item for sale; and
4 said modeling tool further comprising means for removing said item for sale
5 from said modeled environment by removing data representative of a spatial
6 relationship between said at least one item for sale and said environmental hierarchy
7 or another item in said product catalog.

1 66. The program product of Claim 55, said modeling tool further comprising
2 means for generating a report reflecting correlation of sales of items with subsets of
3 said modeled environment for which spatial relationships with said items have been
4 defined.

1 67. The program product of Claim 48, wherein said means for creating a product
2 catalog comprises means for creating a product catalog including at least one human
3 item representing a human belonging to an organization, said human item having a
4 calendaring attribute representing a schedule of the human.

1 68. The program product of Claim 48, wherein said means for creating a product
2 catalog comprises means for creating a product catalog representing a data network,
3 said product catalog including at least one item representing a dataset.

1 69. The program product of Claim 49, wherein at least one attribute associated
2 with a particular item among said plurality of items comprises a procedure attribute,
3 and an attribute value of said procedure attribute tracks performance of a procedure
4 associated with the particular item.

1 70. The program product of Claim 61, said modeling tool further comprising
2 means for generating of a time-dependent view of items from said product catalog
3 populating said modeled environment.